

CLAIMS

1. A sheet conveyance apparatus for conveying  
a sheet by attaching the sheet onto an endless  
5 conveyance belt by applying electric charges onto a  
surface of the conveyance belt, the sheet conveyance  
apparatus comprising:

a charger that charges the surface of said  
conveyance belt in a belt-like alternate voltage  
10 pattern; and

a control part that controls a charge width of  
the alternate voltage pattern in a direction of  
conveyance of the sheet.

15 2. The sheet conveyance apparatus as claimed  
in claim 1, wherein said control part controls the  
charge width in accordance with a type of said sheet.

3. The sheet conveyance apparatus as claimed  
20 in claim 2, further comprising a sheet-type input part  
that inputs information regarding the type of said sheet  
to said control part.

4. The sheet conveyance apparatus as claimed  
25 in claim 2, wherein information regarding the type of

said sheet is given externally.

5. The sheet conveyance apparatus as claimed  
in claim 2, wherein said control part controls the  
5 charge width so that the charge width when the sheet  
contains a resin is smaller than the charge width when  
the sheet contains no resin.

6. The sheet conveyance apparatus as claimed  
10 in claim 2, wherein said control part controls the  
charge width so that the charge width when a surface  
resistivity of the sheet is equal to or smaller than  
 $1 \times 10^{10} \Omega/\square$  is set to be substantially equal to or  
greater than 4 mm and equal to or smaller than 30 mm,  
15 and the charge width when a surface resistivity of the  
sheet is greater than  $1 \times 10^{10} \Omega/\square$  is set to be  
substantially equal to or greater than 2 mm and  
substantially equal to or smaller than 8 mm.

20 7. The sheet conveyance apparatus as claimed  
in claim 1, wherein said conveyance belt has a two-layer  
structure comprising an insulating layer as an obverse  
layer and a medium resistance layer as a backside layer.

25 8. The sheet conveyance apparatus as claimed

in claim 7, wherein a surface resistivity of said  
insulating layer is substantially equal to or greater  
than  $1 \times 10^{10} \Omega/\square$ , and a surface resistivity of said  
medium resistance layer is substantially equal to or  
5 smaller than  $1 \times 10^8 \Omega/\square$ .

9. The sheet conveyance apparatus as claimed  
in claim 7, wherein a thickness of said insulating layer  
is substantially equal to or smaller than  $60 \mu\text{m}$ , and a  
10 thickness of said backside layer is substantially equal  
to or greater than  $40 \mu\text{m}$ .

10. The sheet conveyance apparatus as claimed  
in claim 7, wherein a volume resistivity of a roller  
15 with which said conveyance belt is engaged is  
substantially equal to or smaller than  $1 \times 10^{10} \Omega \cdot \text{cm}$ .

11. The sheet conveyance apparatus as claimed  
in claim 1, further comprising a discharger that removes  
20 or attenuates the charges on the surface of said  
conveyance belt, wherein said discharger is located on  
an obverse side of said conveyance belt and a position  
out of an area where said sheet is brought into contact  
with said conveyance belt.

12. The sheet conveyance apparatus as claimed  
in claim 1, wherein said control part controls a charged  
area of said conveyance belt when a surface resistivity  
of said sheet is substantially equal to or greater than  
5  $1 \times 10^{12} \Omega/\square$  so that at least one of a leading edge  
portion and a trailing edge portion of said sheet is  
attached onto said conveyance belt, the leading edge  
portion being a range from a leading edge of said sheet  
to a position substantially equal to or less than 50 mm  
10 from the leading edge and the trailing edge portion  
being a range from a trailing edge of said sheet to a  
position substantially equal to or less than 100 mm from  
the trailing edge.

13. The sheet conveyance apparatus as claimed  
in claim 1, wherein said control part controls the  
charge with so that the charge width is changed in  
accordance with a distance from a leading edge of said  
sheet.

20

14. An image forming apparatus for forming an  
image on a sheet conveyed by a sheet conveyance  
apparatus conveying a sheet by attaching the sheet onto  
an endless conveyance belt by applying electric charges  
25 onto a surface of the conveyance belt, the sheet

conveyance apparatus comprising:

a charger that charges the surface of said conveyance belt in a belt-like alternate voltage pattern; and

5 a control part that controls a charge width of the alternate voltage pattern in a direction of conveyance of the sheet.

15 15. The image forming apparatus as claimed in claim 14, wherein said conveyance belt is charged before said sheet is fed to said conveyance belt.

15 16. The image forming apparatus as claimed in claim 14, wherein a charging operation to said conveyance belt is stopped while an image is being formed on said sheet, and the charging operation is performed on said conveyance belt when conveying said sheet by a specific distance.

20 17. The image forming apparatus as claimed in claim 16, wherein a polarity of each charge in said voltage pattern is changed in accordance with an amount of movement of said conveyance belt when said sheet is conveyed by the specific distance.

25

18. The image forming apparatus as claimed in claim 16, wherein the charge width of said voltage pattern is an integral multiple of an amount of movement of said conveyance belt when conveying said sheet by the  
5 specific distance.

19. An image forming apparatus for forming an image on a sheet conveyed by a sheet conveyance apparatus conveying the sheet by attaching the sheet  
10 onto an endless conveyance belt by applying electric charges onto a surface of the conveyance belt, the sheet conveyance apparatus comprising:

a charger that charges the surface of said conveyance belt in a belt like alternate voltage  
15 pattern;

a storing part that stores a relationship between a type of said sheet and a charge width of the alternate voltage pattern to be formed on the conveyance belt; and

20 a control part that controls a charge width of the alternate voltage pattern in a direction of conveyance of the sheet in accordance with the type of said sheet based on said relationship stored in said storing part.

20. A method for conveying a sheet by attaching the sheet onto an endless conveyance belt by applying electric charges onto a surface of the conveyance belt, comprising:

5           charging the surface of said conveyance belt in a belt-like alternate voltage pattern; and

          controlling a charge width of the alternate voltage pattern in a direction of conveyance of the sheet in accordance with a type of said sheet based on a  
10 relationship between a type of said sheet and a charge width of the alternate voltage pattern to be formed on the conveyance belt.